DOCUMENT RESUME

ED 296 175 CE 050 532

AUTHOR Kirts, Carla A.
TITLE Resources for Teaching Forestry in Alaska. Agricultural Education Publication No. 1 (2nd Edition).
INSTITUTION Alaska Univ., Fairbanks. School of Agriculture and Land Resources Management.
PUB DATE 87
NOTE 45p.
PUB TYPE Reference Materials - Bibliographies (131) -- Reference Materials - Directories/Catalogs (132)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Citations (References); Classroom Techniques; Course Content; Curriculum Guides; *Educational Resources; Elementary Secondary Education; Environmental Education; *Forestry; Forestry Occupations; *Information Sources; *Instructional Materials; Learning Activities; *Natural Resources; Teaching Methods; Trees
IDENTIFIERS *Alaska; Cold Climates

ABSTRACT

This resource guide was developed to provide assistance to Alaskan teachers of vocational agriculture, biology, environmental science, outdoor education, and other disciplines interested in securing instructional materials related to forestry. The guide contains several sections: two bibliographies and eight additional resource lists. The first section is an 18-page annotated bibliography of selected resource materials for teaching forestry. Included are addresses, cost information, a brief description of contents, and potential instructional value. The second bibliography is a list of 17 standard texts most often used for teaching forestry courses in colleges, intended as references for the teacher to use in assimilating technical information into lessons. The directory of additional resources lists magazines, catalogs, businesses, colleges and universities, headquarters offices of the United States Forest Service, state forestry agencies in the United States, cooperative extension forest resource specialists, and directories and other resources. The final section is a form with which teachers can recommend forestry curriculum materials. (KC)

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RESOURCES FOR TEACHING FORESTRY IN ALASKA

by

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RESOURCES FOR TEACHING

FORESTRY IN ALASKA

by

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UNIVERSITY OF ALASKA-FAIRBANKS

1982
(Revised 1987)

Agricultural Education Publication No. 1 (2nd Edition)

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PREFACE

Resources for Teaching Forestry in Alaska is intended to provide assistance to teachers of vocational agriculture, biology, environmental science, outdoor education, and other disciplines interested in securing instructional materials related to forestry. This publication is not an all-inclusive bibliography; instead, it is a selected bibliography. A mere listing of hundreds of resources related to forestry science and management would be of little use to practicing teachers. Therefore, all resources were screened for their potential utilization as instructional materials and, consequently, not all resources reviewed were entered.

This publication is divided into several sections: two bibliographies and seven additional resource lists. The first section is an Annotated Bibliography of selected resource materials for teaching forestry. Little emphasis has been placed on a formal bibliographic format. Instead, a more functional format includes address and cost information associated with procuring each item which is followed by a brief description of contents and potential instructional value. Many citations were selected for their emphasis on northern forestry; however, general forest science and management texts and instructional materials are included as well.

All annotated citations should be considered appropriate for use at the secondary level unless statements to the contrary appear in the synopsis. Several elementary level resources which appeared to be outstanding examples of instructional materials are included and can be used as special education materials, as foundation information for teacher-developed secondary materials, and in other capacities left to

the discretion of the teacher.

The second bibliography, Forestry Texts for Use as Teacher References, is a list of standard texts most often used for teaching forestry courses in college. These are intended as references for the teacher to use in assimilating technical information into lessons. A more formal bibliographic format without costs and addresses is used because many libraries should have copies for loan, which precludes the necessity for having a personal copy. However, if a personal copy is desired, contact the school librarian for publisher addresses or refer to the list of free catalogs which appears in this publication.

The Directory of Additional Resources includes addresses for institutions, agencies, and businesses which are specifically concerned with forestry educational and/or public information systems regarding current forestry practices. Magazine publishers, businesses, colleges and universities, forestry agencies, and cooperative extension consultants are listed. These sources are not only useful for obtaining answers to specific questions, but also are sources recommended for securing new curriculum materials and/or resource persons who can assist with classroom and field instruction.

In order to maintain a current bibliography of useful forestry curriculum materials, teachers having used curriculum materials not listed in this publication and having found them adequate for instructional purposes are requested to share an annotation with the author. A form for providing the necessary information is located on the last page of this publication. Furthermore, if items appearing in this publication are inadequate based on teacher experience with the item, the author would appreciate receiving comments to that affect as well.

ANNOTATED BIBLIOGRAPHY

ANNOTATED BIBLIOGRAPHY

Adams, Phyllis C. Guide to the Exotic Tree Plantation in the T-Field Portion of the Boreal Arboretum at the University of Alaska, Fairbanks. 1987. Available from the Cooperative Extension Service, University of Alaska, Fairbanks, 99775 (free).

The purpose of this 20 page field guide is to inform visitors and students of the tree species planted and research conducted at the T-Fields on the University of Alaska Fairbanks campus. If visiting Fairbanks, this site would be an excellent educational experience for teachers and students.

Alaska's Birch. "Alaskan Woods," Series No. 2. 1976. Available from U.S.D.A., Forest Service; Federal Office Building; Box 1628; Juneau, Alaska 99802.

The characteristics of birch and birch wood are discussed. Products derived from birch are described. This is a rather detailed text, however, it is useful for discussing products obtained from forests and comparing uses of various species (30 pages).

"Alaska Branching Out." Available from Tony Gasbarro, Editor, Cooperative Extension Service, University of Alaska Fairbanks, Alaska 99775-5200 (free).

This is a newsletter series about forestry in Alaska. It is published 4 times per year. This is one of the few sources of current information about forestry and the forest industry in Alaska. Write to the above address to be placed on the mailing list.

Alaska Department of Fish and Game. Alaska Wildlife Week, Unit 5: Alaska's Forests--More Than Just Trees. Available from ADF&G.

This unit emphasizes forest wildlife, ecology, and conservation and is designed for upper elementary students. It includes a teacher's guide for 5 lessons, a wildlife poster, forest wildlife cards, a nature trail design guidebook, a forest game, and a 5-part filmstrip series. Lessons contain teacher background information, introductory activities, student worksheets, and ideas for curriculum integration. (Your school library may have this unit.)

Alaska Department of Natural Resources. Alaska People Planning Land and Resources Education: A Reader. 1980. Available from DNR, 400 Willoughby Ave., Juneau, 99801-1000.

This 153 page reader is probably available in your school library; it was prepared as an instructional publication. Although timber is seldom mentioned specifically, the general information regarding land resources management is pertinent. For example, this is an excellent reference for distinguishing between public and private land management. Similarly a specific section describing Native corporation land management is included. Many sketches, maps and study blocks compliment the text. This is an outstanding resource for helping students explore issues involved in land management. Problem solving and decision making are emphasized.

Alaska Geographic Society. Alaska's Forest Resources. 1985. Available in most bookstores in Alaska or order from the Alaska Geographic Society, Box 4-EEE, Anchorage, 99509-6057; (907) 563-5100 ($14.95).

A colorful, general description of the forest resources of Alaska is presented in this 200 page text. This is an excellent reference on topics such as identifying, measuring and growing trees; uses of forest products; the history of forestry in Alaska; and related energy, fire and public land use concepts. The quality of the text is commensurate with the usual National Geographic standards.

"Alaska Natural Resources Management Series." Available from the Cooperative Extension Service, Fairbanks, 99775-5200 (free).

This is a new series sponsored and distributed by the Cooperative Extension Service. Each pamphlet is approximately 4 pages and 3-hole punched for convenient storage. Topics and authors vary; however, forestry topics will be included. For example, two May 1987 issues were prepared by professional foresters on burning and land clearing. This may be a beneficial mailing list to be on.

Alaska's Spruce: Sitka Spruce and White Spruce. "Alaskan Woods"; Series No. 1. 1971. Available from U.S.D.A., Forest Service; Federal Office Building; Box 1628, Juneau, Alaska 99802.

The characteristics of spruce trees and spruce wood are explained. Products derived from spruce are discussed in some detail. This is an excellent reference for comparing Sitka and white spruce and discussing forest products (41 pages).

Alaska's White Spruce. 1979. Available from Forests North, Ltd.; Anchorage, Alaska.

This booklet (40 pages) was written as a report to the state legislature. The status of white spruce is discussed, both as a present and potential renewable resource. Photographs and illustrations highlight discussions. It is a good reference for students.

Alaskan Women in Timber. Alaska's Great Green Forest: An Educational Program for Students in Grades 4-5. 1982. Available from AWIT; 111 Stedman Street; #200, Ketchikan, Alaska 99901. (Free for Alaska teachers; $5.00 for others.)

This is a file folder of 5 duplicating masters with information and suggestions for possible teaching strategies. Resource lists, slides, and tree seeds may be acquired from AWIT. A newly revised edition is in press. It has been expanded to 16 lessons for grades 3-6.

Anderson, David A. and William A. Smith. Forests and Forestry. Interstate Printers and Publishers; Jackson at Van Buren; Danville, Illinois 61832. ($11.50)

This was written as an introductory forestry test for secondary students. Topics included are: ecology, tree identification, forest measurements, silviculture, reforestation, forest range management, forest products, and forest protection. A Forestry Curriculum Guide is available ($1.95) to accompany the text. The new edition, 1982, includes a discussion of utilizing wood for energy.

Arvola, T. F. California Forestry Handbook. 1978. Available from Office of Procurement; Publications Section; P. O. Box 20191; Sacramento, California 95820 ($2.50; make checks payable to the State of California).

The main purpose of this 232 page text is to provide a practical forestry guide for the management of commercial forest lands held in farms and small ownerships in California. It serves as a general reference for forest owners, timber operators, and forest technicians, but is not a detailed, technical reference a professional forester would readily consult. Excellent examples of applying state forest policy are given. The appendix has extensive charts, tables, and working definitions. Topics such as forest management, forest inventory, wood products, tree harvesting, log scaling, forest roads, forest protection, and forest-range management are addressed.

Bibliography of Cooperative Extension Service Literature on Wildlife, Fish, and Forest Resources. 1982. Available from the Department of Wildlife Ecology; Cooperative Extension Programs; University of Wisconsin; Madison, Wisconsin 53706.

This 42 page publication is a compilation of cooperative extension publications dealing with wildlife, fish and forestry. Citations were obtained by contacting CES units in each state. Only those units which responded were included in the bibliography; therefore, all entries are current and available (i.e. not out of print, although the list is not all inclusive). In terms of forestry, a substantial number of references appear applicable to Alaska.

Bromley, W. S. Pulpwood Production. 34th edition. Available from Interstate Printers and Publishers. Jackson at Van Buren; Danville, Illinois 61832 ($11.00).

This has become a standard text for secondary students. Skills specific to the pulpwood industry are emphasized. All aspects of the industry, from harvesting systems planning to business analysis, are discussed.

Brown, Vinson. Reading the Woods. MacMillan Publishing Company; 866 Third Avenue, New York, New York 10022. 1974.

This 160 page text contains over 120 photographs and numerous drawings. As a secondary level text topics such as recognizing how climates make woods; seeing the tales of weather; knowing the story of soils, effects of fire and rebirth, and how animals and man fashion the woods; appreciating nature's survival scheme; reading signposts in evergreen forests; and understanding leaf-dropping forests are discussed. Many outdoor activities could be developed by the teacher which relate discussions in the text to the real world.

"Burning Wood." Northeast Regional Agricultural Engineering Service, Cooperative Extension. 1978. Available from NRAES; Riley Rob Hall; Cornell University, Ithaca, New York 14853 ($1).

This 30 page, notebook-sized extension publication covers the basics of using wood as a fuel. Many illustrations are used to emphasize key points. Topics include obtaining, seasoning, storing and burning wood; characteristics of wood; wood stove types and efficiency ratings; and furnaces. The appendix contains sections on cutting fuelwood with a chainsaw, using axes for splitting wood, and burning coal.

Butts, Paul M. and Druid N. Preston. "Whole Tree Chipping...A Forest Management Tool." Research Division, Georgia Forestry Commission. June, 1979.

This 8-page publication explains in easy to understand language the advantages and disadvantages of using a whole tree chipping harvest system. Excellent black and white photographs show the various stages in the chipping process. This is a good publication for showing students the latest in forest harvesting equipment.

"Careers in Agriculture: Forestry." (Filmstrip) Available from Vocational Education Productions; California Polytechnic State University; San Luis Obispo, California 93407 ($32.50).

This kit includes a filmstrip, cassette and script (VEP also sells kits for transforming filmstrip into slide sets). The filmstrip

presents careers in forest establishment, forest protection, logging, harvesting and transportation, wood utilization, and Christmas tree enterprises.

Collins, B. McManus and Fred M. White. Elementary Forestry. Reston Publishing Company; Reston, Virginia. 1981. Available from Prentice-Hall; ServCode ZQ; 150 White Plains Road; Tarrytown, New York 10581 ($12.71).

This text was written to acquaint readers with the development and current status of forestry in the U.S. and elsewhere in the world, and to predict developments in forestry and forest products that may take place in the future. It is intended to be primarily informative and only semi-technical. The 204 page text is accompanied by an instructor's manual, at no additional charge; however, only delivered upon request. The manual contains word study, learning activities, example test questions (true/false, matching, completion, etc.), and a bibliography for each chapter. Some topics included in the text and manual are: forest terminology, forest environment, recreation, forests and the U. S. economy, forest protection, and harvesting.

The Deciduous Forest. (A Prentice-Hall sound filmstrip $49), with a program guide.

This filmstrip is a comprehensive exploration of the evolution and current living relationships between numerous plant and animal life forms in the broad leaf tree forest. Beginning with the conditions necessary to support a forest, the program explores the centuries-long process of renewing a burned forest, effects of constant change on animal life, complex food webs, forest soils, various plant and animal symbiotic relationships, lichens, mycorrhiza fungus, and the leaf carpet on the forest floor. Available with cassette or record.

Dilworth, J. R. Log Scaling and Timber Cruising. Corvallis: University of Oregon, 1981. Available from Ben Meadows Company; 2601-B West 5th Avenue; P. O. Box 2781; Eugene, Oregon 97402 ($9).

The 468 page handbook which fits easily into a jacket pocket is revised annually and is intended as an up-to-date reference of both U.S. Forest Service and private industry scaling and log grading procedures. It is a good teacher reference but could also be used as a practical field reference by more advanced students.

Division of Timber Management Research, Forest Service. Silvicultural Systems for the Major Forest Types of the U.S. Agricultural Handbook Number 445. 1973.

This 124 page publication summarizes for each of the 37 major

forest types in the U.S. the silvicultural systems that appear biologically feasible on the basis of present knowledge. Supporting information is given on the occurrence of the 37 forest types, the cultural requirements of the component species, and the biological factors that control the choice of silvicultural options. The text is arranged in regional sections and is suitable for reprinting. It can serve as a general text for secondary students, particularly with respect to comparing actual applications of the various silvicultural systems.

Duffy, Eric. The Forest World: the Ecology of the Temperate Woodlands. 1980. A & W Publishers, Inc., 95 Madison Avenue; New York, New York 10016 ($18.95).

This 120 page book is a must as a reference, either in the classroom or school library. Beautiful photographs document the subjects addressed throughout. Section titles include: The Marking of the Forest (Forest Zonation of the Northern Hemisphere; Temperate Forests of the Southern Hemisphere), The Forest as a Living World (Insects - the Foliage Feeders; Forest Birds, and Mammals of the Forest), and The Forest Today (First Steps in Forest Protection, Felling the Giants, Lichens, National Parks as Sanctuaries). Some sections are of international scope.

Eyre, F.H., editor. Forest Cover Types of the United States and Canada. Available from the Society of American Foresters; 5400 Grosvenor Lane; Washington, D. C. 20014 ($7.50).

This 125 page publication contains brief, yet detailed, descriptions of the various forest types found in the U.S. and Canada. It can serve as a classroom or library reference; however, it is best used as a teacher reference for preparing handouts and lessons relating to forest types.

Fallers' and Buckers' Handbook. 1978. Worker's Compensation Board; 5255 Heather Street; Vancouver, B.C. V52 3L8.

This pocket-size 120 page handbook is an excellent "how to" guide for falling and bucking timber with a chain saw. Creative, colorful illustrations of falling and bucking procedures are included. The emphasis is on safety, of course. This is an excellent student text.

Fazio, James R. The Woodland Steward: A Practical Guide to the Management of Small Private Forests. 1985. Available from the Woodland Press, Box 3524 University Station, Moscow, Idaho 83843. ($12-$14).

"Practical" is the key word for describing this text. The 211, well-illustrated pages of this publication provide

easy-to-understand insight and details related to effective woodland management. Although this was not prepared as an instructional resource, it has characteristics which lend itself toward that end. For example, illustrations provide excellent ideas or masters for transparencies. Furthermore, many topics and skills are presented in step-by-step detail, facilitating instruction of such. Topics range from nuturing and maintaining, to protectiing the woodland resources. Responsible stewardship is a central theme. This text is an excellent teacher's resource. Information can be adapted for elementary and secondary students. In some cases, it could be used as a secondary student's text.

Forbes, Reginald D. Woodlands for Profit and Pleasure. Available from the American Forestry Association; 1319 18th Street, N.W.; Washington, D. C. 20036 ($6.00 less 10% discount for AFA members).

This book is written in laymen's terms and is intended to help woodlot owners understand their small forests. It is an excellent reference book for helping students understand how woodlots are managed, from initial land acquisition to rather sophisticated management techniques.

Forest Management Digest. Forestree Farmers of Minnesota, Inc.; P. O. Box 363; Park Rapids, Minnesota 56470. ($15.95 & $1.25 handling).

This 400 page, 8 1/2" x 11" text is the third edition. This book was written for the non-professional wanting a better understanding of forest and wildlife management and is, therefore, written in layman's terms. It includes information on making and saving money from private forest development, animal track identification, fuelwood use, and forestry terms. Chapters include: Help for the Forest Landowner, How a Tree Grows, Harvest, Regeneration, Management and Improvement, Special Forest Products, Wildlife, Measurements, Taxes, Economics, Fire, Tree Problems, Roads, Water, History, and Tree Identification. This book has been used as a high school and community college text.

Forest Nursery Studies. 1976. (grades 7-10) Available from Western Education Development Group; The University of British Columbia; Vancouver, B.C. V6T 1W5 ($5.00 less 20% educational discount).

This resource concerns investigations in forest tree reproduction and growth. It includes classroom and outdoor activities. This is an excellent source for hands-on instructional activities.

Forestry Curriculum Guidelines. Available from Vocational Education Productions; California Polytechnic State University; San Luis Obispo, California 93407 ($33.00).

This curriculum guide was developed utilizing the expertise of over 40 foresters and curriculum specialists. The 512 page guide

provides assistance for developing lesson plans and designing one or two year courses of study. Each instructional unit is three-hole punched and stapled. The guide includes 20 instructional units, 151 performance objectives, 23 student review/test forms, and 150 transparency masters. This is an excellent resource for secondary programs.

Forestry in Agricultural Education. Agricultural Education Service; Division of Vocational Education; State Department of Education; Richmond, Virginia 23216. July 1970.

This 119 page curriculum guide contains 14 lessons to help the teacher prepare students for entry level employment in forestry industries and/or prepare students to manage their own private forest lands. Many resources are listed with each lesson and illustrations are found throughout. Lesson topics include: How Trees Grow; Tree Identification; Forest Ecology; Reading and Interpreting Maps and Aerial Photos; Silviculture; Reproducing the Forest; Measuring and Marking; Harvesting; Processing; Grading Lumber; and Protecting the Forest.

Forestry Programs for Programmable Calculators. (1982) Available from Michigan State University; Extension-Research Information; 1 Morrill Hall; East Lansing, Michigan 48824 ($1.10).

This is essentially a catalog of available forestry related rograms to be used with programmable calculators. This should be used with more advanced students. Some of the subject areas included are: forest economics, forest measurements, range anagement, forest silviculture, timber harvesting, urban forestry, and wood products.

Forestry Safety Posters. 19"x25". Available from West Virginia University; Center for Extension and Continuing Education.

Colorful and comic. Excellent for classroom posting.

WV-OSH - P1 Be Hard Hatted, Not Hard Headed
WV-OSH - P2 Safety Awareness Saves Lives..and Toes, Too
WV-OSH - P3 Guard Against Kickback! Wear Chaps and Use the Chain Brake
WV-OSH - P4 Logs Have No Brains...But You Do. Stay Clear.
WV-OSH - P5 Watch That Saw. It Bites.
WV-OSH - P6 Make Safety a Habit, Not a Chore
WV-OSH - P7 Noise Doesn't Bother You Now, But Later it Will
WV-OSH - P8 Who Didn't Wear Gloves?
WV-OSH - P9 Be Prepared While You Can
WV-OSH - P10 Accidents Know No Age
WV-OSH - P11 To See Your Family Grow, Wear the Proper Eye Protection
WV-OSH - P12 Prevent Fires - Keep Your Area Clean

Glossary of Forest Related Terms. Available from Potlatch Corporation; P. O. Box 3591; San Francisco, California 94119.

The purpose of this 5 1/2" x 8 1/2" notebook (40 pages) is to define forestry terms as they are commonly used in the field. Except for very technical terms (i.e. economic terms) definitions are precise and clearly stated in vocabulary easily comprehensible to high school students.

Growth of a Tree. Available from the American Forest Institute; 1619 Massachusetts Avenue, N.W.; Washington, D.C. 20036.

Both a classroom poster and a teaching suggestions booklet are available. This has been a standard teaching tool for several years. Ideas for using the topic in language arts and art classes (as well as science classes) are also included. This is a resource you may want to share with other teachers to provide an interdisciplinary approach to learning.

Harlow, William M. Inside Wood. Available from the American Forestry Association; 1319 18th Street N.W.; Washington, D.C. 20036 ($7.50 less 10% discount for AFA members).

The story of wood is developed through a clear and fascinating text filled with bright, unusual photographs. Through the use of an electron microscope, photographs of wafer-thin slices of hardwood and softwood trees show what trees look like deep, down inside. The author describes characteristics of wood such as lightness, workability, longevity, beauty, and function.

Harlow, William M. Ways of the Woods: A Guide to the Skills and Spirit of the Woodland Experience. 1979. Available from the American Forestry Association; 1319 18th Street, N.W.; Washington, D.C. 20036 ($8.50 less 10% discount for members).

Excellent reading for grades 6 and up. The author weaves woodslore and history with a wealth of practical information on camping and forestry. It is an excellent text to have as a classroom or library reference. It provides a teacher or camp leader with many ideas for outdoor activities.

Holsten, Edward J., Richard A. Werner, and Thomas H. Laurent. Insects and Diseases of Alaskan Forests. U.S.D.A., Forest Service, Alaska Region, Report Number 75. 1980.

This convenient handbook-size publication contains identification keys for diseases and insects found in Alaskan forests. Many illustrations and actual photographs are included. It is an excellent student reference.

"How You Can Make Paper." Available from the American Paper Institute; 260 Madison Avenue; New York, New York 10016.

This pamphlet is a "recipe" for making paper in the classroom. It can be used for both elementary and secondary students. It is a good idea for a classroom activity related to lessons regarding forest products.

Intermediate Fire Behavior. Intermountain Region, U.S. Forest Service.

This 59 page publication includes forest fire fundamentals such as principles of combustion, topography, fuels, and safe practices under blowup conditions. Excellent illustrations are given of concepts discussed. Even though the script is a little technical in places, this can be used as a high school student text with close teacher supervision.

Introduction to the Fundamentals of Fire Behavior: A Programmed Learning Tool. U.S.D.A. Forest Service. Available from the Government Printing Office: Washington, D.C. 20402 (45¢).

This is a programmed course which allows each student to progress at an individual pace. It was originally written for training prospective U.S. Forest Service firefighters; however, it appears to be readily adaptable for high school programs.

Juliar, Helen. The Forest Book. Available in limited quantities from Southeast Alaska bookstores or write, Alaska Women in Timber; 111 Stedman Street, #200; Ketchikan, Alaska 99901 ($7.95).

This book was written by a teacher and is written in a notebook style. Multilevel (primarily elementary) games and activities are centered around forestry.

Karsky, T. J. Safe Chain Saw Operation. 1981. 10p. with illustrations. Bull. 599. (35¢) Available from Cooperative Extension Service. University of Idaho, College of Agriculture, Moscow, Idaho 83843.

This is a short publication of value for a safety lesson. It is suitable for providing each student a personal copy. Thus, they have an opportunity to share the copy with their parents, further promoting safety consciousness.

Ketchum, Richard M. The Secret Life of the Forest. 1970. American Heritage Press, a subsidiary of McGraw-Hill, Inc. ($7-$12?)

This is an excellent high school reference and/or text. The book (115 pages) was written in cooperation with the St. Regis Paper Company and is beautifully illustrated. The complex life within

the forest community is described. The origins of trees, how seeds become trees, photosynthesis, forest management, and forest products are among the topics discussed.

The Life of the Forest. Available from St. Regis; 150 East 42nd Street; New York, New York 10017.

This colorful, notebook-sized bulletin can be three-hole punched for easy insertion into the student's notebook. The life cycle of a tree from seed to maturity on through subsequent utilization as a product beneficial to man is colorfully illustrated and described (grades 6 and up).

Managing the Forest. 1978. (Grades 10-12) Available from Western Education Development Group; The University of British Columbia; Vancouver, B.C. V6T 1W5 ($12.00; less 20% educational discount).

A comprehensive resource manual (392 pages) for a high school course in forestry, leading to an understanding of intensive forest management. This is an excellent resource for planning a forestry curriculum.

Managing the Great American Forest. Available from the American Forest Institute; 1619 Massachusetts Avenue, N.W.; Washington, D.C. 20036.

The 22 page notebook-sized pamphlet lends itself to three-hole punching for easy insertion into a student's notebook. Statistics are given on forest lands in the U.S. and specific examples of forest management plans for a small woodlot owner, a governmental agency and a private company are charted. The print is large and topics are well illustrated. It is an excellent introduction to general forest management (grades 6-10).

McConnell, Robert D. Woodworking: Trees, Wood and the Woodworking Industry. 1976. Milliken Publishing Company; St. Louis, Missouri $9.95.

Contains 16 transparencies and 16 duplicating masters. The transparencies are excellent. Professional graphics, full-color quality and ready-to-use formats make this a handy resource. Topics include: Areas of Renewable Natural Wealth; How a Tree Grows; Hardwood; Softwood; Grades of Lumber; Log Structure and Details; Grain Patterns; Wood Comparison Chart; Wood Identification; Lumbering; Sawing and Drying Lumber; Wood Defects; Plywood Construction and Veneer Manufacturing; Processed Wood; Forest Products and By-Products; and Careers in the Wood Industry. Tests are included and duplicating masters provide the student with copies of the transparencies, a handy component for the student's notebook.

McCormick, Jack. The Living Forest. Harper and Row, New York. 1959.

This 125 page book is a well illustrated introduction to forests, from the forest floor to general forest types. Chapters include topics such as life on the forest floor, forest insects, forest tree diseases, weather in the forest, stories a stump can tell, the forests of North America, how nature harvests the forest, and man and the forest. It is an excellent student reference at the secondary level. With teacher guidance, it could be used with upper level elementary students.

McNicholas, Helen L., editor. Alaska's Agriculture and Forestry. December 1983. Published by the Cooperative Extension Service, University of Alaska, 99775 ($4.00).

This 220 page publication is a compilation of essays by 30 authors explaining the current and potential status of agriculture and forestry in Alaska. Admittedly, the emphasis is on agriculture; however, chapters related to forestry include soils, climate, water resources, forestry in Alaska, and economic factors in Alaska's agricultural development. Many pictures, graphs, and charts are used to augment the technical information. A colorful wall-map of "Forests of Alaska" is included with the publication.

Measuring the Forest. 1975 (grades 6-12) Available from Western Education Development Group; The University of British Columbia; Vancouver, B.C. V6T 1W5 ($5.00 less 20% educational discount).

This is a comprehensive guide to activities related to timber cruising including inventories of forest land and measures of forest productivity.

Mifflin, Ronald W. and Hilton M. Lysons. Glossary of Forest Engineering Terms. Pacific Northwest Forest and Range Experiment Station, USDA, Forest Service. July, 1979.

This glossary presents contemporary terms frequently encountered in the practice of forest engineering and related fields. Included are words connected with logging, transportation, construction, silviculture, and forest engineering. The terms and definitions selected are adaptable to worldwide usage.

Minckler, Leon S. Woodland Ecology: Environmental Forestry for the Small Owner. Syracuse University Press; New York, New York 13210. 1975.

The text describes the important contribution of woodlands to the environmental health of an area and the personal satisfactions and economic benefits an owner can derive from a well-managed environment. Emphasis is placed on providing woodland owners with

an understanding of the ecological principles related to the total forest environment in eastern U.S. forests. The text begins with background concepts on the ecological, economic, and social considerations of woodlot management. Then woodland values such as timber, wildlife, recreation, aesthetics and watersheds are discussed separately with a followup regarding harmonious and integrated uses combining all values.

National 4-H Council. What's a Tree to Me? 1981. Available from the National 4-H Council; 7100 Connecticut Avenue; Washington, D.C. 20015.

These materials were developed for 4-H leaders and teachers who are involved with youth ages 9-14. The importance, value, usefulness and pleasure derived from trees in urban, suburban and rural settings are emphasized throughout. Eleven units are included, each filled with practical, interesting activities that are centered around cheap, accessible materials. A listing of these materials and learning objectives precede each unit. These units may be used in or out of sequence. Excellent additional references are given at the end of each unit.

North American Forest Lands at Latitudes North of 60 Degrees. Proceedings of a Symposium held at the University of Alaska, Fairbanks, 1977.

This 332 page text is no longer available to individuals; however, every library in Alaska was sent a copy. It can serve as an excellent teacher reference for preparing lessons on the uniqueness of forest management in the north.

Otter, Floyd L. and Edward C. Carpenter. Mathematics for Natural Resource Technicians. Reedley College; Reedley, California. Available from Ed Carpenter; 941 E. Yale Avenue; Fresno, California 93704.

This text is a compilation of practical exercises arranged in notebook form. The exercises are designed for senior high school students and college freshmen. The explanations and problems are intended to familiarize students with mathematical principles involved in natural resources management. Contents include: cross-checking multiple columns; percent; squares, square roots and cubes; compound numbers; length and area; the right triangle; scale of maps and drawings; measuring timber products; the circle, segments and sectors of circles; degrees, angles and compass bearings; the closed traverse; volume, capacity and weight; fire-trucking hydraulics; ratio and proportion; positive and negative numbers: standard deviation; graphical presentation of statistics; numerical trigonometry gradient; using logarithms; and the wedge prism.

Project Learning Tree; P. O. Box 129; Tilburone, California 94920.

The Project Learning Tree Curriculum is recommended for any teacher involved with any aspect of environmental education. There are two books of projects, one for K-6 and one for 7-12. Generally, the curriculum development staff requires teachers to attend their workshops before the materials are distributed. The curriculum includes projects on environmental awareness, diversity of forest roles, cultural contexts, societal perspectives on issues, management and interdependence of natural resources, life support systems, and lifestyles. To find out about workshop in your area, contact your state fish and game or forestry agency, or your local extension forester.

Randall, Charles and Henry Clepper. Famous and Historic Trees. Available from The American Forestry Association; 1319 18th Street, N.S.; Washington, D.C 20036 ($4.50; less 10% discount for AFA members).

This book serves as an excellent classroom reference or library book. The stories behind 268 well-known American trees are told and beautifully illustrated. Trees from every state are included. The "immortals" section includes the Liberty Tree of Boston, the Charter Oak of Connecticut, the Lone Sentinel of Kansas, and the Cherokee Indian Treaty Oak of South Carolina. Other sections describe trees associated with people, music, forestry, religion, conservation, education and other special interest areas.

Saltman, David. Paper Basics: Forestry, Manufacture, Selection, Purchasing, Mathematics and Metrics, Recycling. 1978. Reinhold Company; 135 West 50th Street, New York, New York 10020.

The title explicitly describes the contents of this text on one of the major forest projects. It is written at a high school level and can serve as an excellent student reference on all aspects of the paper industry. Each chapter is subdivided under specific headings and the text is well illustrated throughout.

Sarna, Rudolph P. Chain Saw Manual. Available from Interstate Printers and Publishers; Jackson at Van Buren; Danville, Illinois 61832 ($4.95).

This book is intended to serve as a guide for classroom use, as well as a self-study guide. The first chapters include discussion of selecting and maintaining equipment for safe and satisfactory operation. The following chapters stress operational techniques. Safety techniques are emphasized throughout the book. This text should be complimented with demonstrations and hands-on experiences for the students.

Schroeder, Mark J. and Charles C. Buck. Fire Weather: A Guide for Application of Meteorological Information to Forest Fire Control Operations. 1970. For sale by the Superintendent of Documents; U.S. Government Printing Office; Washington, D.C. 10402 ($4.85).

This 230 page text provides technical information on weather as it affects fire behavior. It serves best as a teacher's reference, not a student text. Each chapter is well illustrated. Chapters include: Basic Principles; Temperature; Atmospheric Moisture; Atmospheric Stability; General Circulation; General Winds; Convective Winds; Air Masses and Fronts' Clouds and Precipitation; Thunderstorms; Weather and Fuel Moisture; and Fire Climate Regions. It provides excellent ideas for transparencies which can be teacher-designed and used to explain some of the more complex concepts.

Seeing Through the Trees. 1977. (Grades 4-7). Available from Western Education Development Group; The University of British Columbia; Vancouver, B.C. V6T 1W5 ($5.00 less 20% educational discount).

This is an excellent assemblage of activities for developing a comprehensive understanding of trees and their interaction with plants and animals in the environment.

Shields, Mary and Nancy vanVeenen. Small Wonders: Year-Round Alaska. 1987. Available from Pyrola Publishing, P.O. Box 80961, Fairbanks, 99708 ($14.00).

The seasonal changes of interior Alaska are documented in this 85 page journal sharing the small wonders observed over a 14 year period. This is an excellent reference for grades 6 and up for a year-long observation project. As the author states "you may want to begin reading in the current month's chapter and take a full year to finish, month by month as they roll by." Then step beyond the classroom and explore; practice seeing details. This is an excellent reference to share with the English teacher. A combined project of science/nautral history and journaling may be appropriate. An 18-inch "Wall Journal" comes with the book. It can be colored and used to record observations each month. The chart can be used explicitly for forestry; however, a more comprehensive record is more appropriate.

Society of American Foresters. Choices in Silviculture for American Forests. Available from Society of American Foresters; 5400 Grosvenor Lane; Washington, D. C. 20014 ($4.00; 50 or more $3.50)

This text explains and illustrates silvicultural systems of clearcutting, seed-tree, shelterwood, single tree selection, and group selection. The book details the system's applicability within nine major forest types within the U.S., and their effects on forest values - particularly wildlife. The nontechnical style

of writing allows the book to be used as an excellent student reference.

"Some Little Known Facts About Wood. American Wood Council; 1619 Massachusetts Avenue, N.W.; Washington, D.C. 20036.

Each student should have a personal copy of this 15 page booklet. Characteristics of wood such as strength, durability, and weather resistance are discussed. This can be used for grades 6 and up.

Stephens, Rockwell R. One Man's Forest: Pleasure and Profit from Your Own Woods. Stephen Greene Press, Brattleboro, Vermont. 1974. ($6.95)

This 156 page book is a personal narrative describing in detail how to cultivate a private woodlot. It includes basic procedures, do's and don'ts, tools needed and how to use them, all fully illustrated and supplemented with tables and drawings. Specific subjects addressed include timber stand improvement; felling, limbing and bucking; skidding; planting; tool maintenance; tree identification; and land purchasing. It is written in laymen's terms and is useful as an entertaining and educational student reader.

The Stump Book. 1975 (grades 3-7). Available from the Western Education Development Group; The University of British Columbia; Vancouver, B.C. V6T 1W5 ($5.00 less a 20% educational discount).

Investigations of tree stumps with activities on history, math, the plants and animals of stumps are emphasized in this text. A discussion of their importance to the economy is also included.

Tools of the Forester Kit. Available from Vocational Education Productions; California Polytechnic State University; San Luis Obispo, California 93407. ($90.25)

The following sound filmstrips (scripts included) may be purchased individually or as a complete set:

1. The Chain Saw and Other Harvesting Tools ($32.50)

   This presentation describes safe methods of felling trees to minimize hazards and damage. Felling wedges, peavies, skidders, pulp hooks and other tools are also described; however, emphasis is placed on correct use and maintenance of the chain saw.

2. Tools for Measuring the Forest. ($32.50)

   Students see how data are collected from the forest, cut timber, and the land on which it grows. Instruments and tools

described include: Biltmore stick, Spiegel Relaskope, tree calipers, Abney level, staff compass, wedge prism, increment borer, and nine other tools. Emphasis is placed on the importance of forest measurements in the business of forestry.

3. Hand Tools of the Fire Control Forester. ($32.50)

Since many students spend summers working fire lines, it is important that they learn to use basic fire fighting tools safely. The fire rake, backpack waterpump, brush hook, McLeod, fire broom, and six other tools are discussed.

Tree Identification: Western Pines Slide Set. Available from Vocational Education Productions; California Polytechnic State University; San Luis Obispo, California 93407. ($21.75)

The set includes color slides identifying distinguishing characteristics of 10 major western conifers. Botanical names and common names are noted on one set of slides, while another set without identification is provided for testing purposes and individual review. Overhead transparency masters and an illustrated teacher's manual are also included.

U.S.D.A., Forest Service. Silviculture...Is Growing Trees. 1975. Available from the U.S. Government Printing Office; Washington, D.C. 20402.

This 10 page, notebook-sized publication is excellent as an introduction to silviculture for middle school grades. It is colorfully illustrated and in simple terms explains intermediate cutting, regeneration cutting, selective cutting, the shelterwood system, the seed-tree system, and clear cutting. Every student should have a personal copy.

Viereck, Leslie A. and Elbert L. Little, Jr. Alaska Trees and Shrubs. (1972) Agricultural Handbook No. 410. Available from U.S.D.A. Forest Service; Federal Office Building; Box 1628, Juneau, Alaska 99802 ($3.25).

This identification handbook is more detailed than the Guide to Alaska Trees (following citation). More species are included. It can serve as an excellent classroom reference book.

Viereck, Leslie A. and Elbert L. Little, Jr. Guide to Alaska Trees. (1974) Agricultural Handbook No. 472. Available from U.S.D.A. Forest Service; Federal Office Building; Box 1628, Juneau, Alaska 99802 ($1.35).

This handbook is available as a student's text for identifying trees found in Alaska. Detailed illustrations are given of the

species discussed. This is an excellent reference for teaching tree identification procedures.

Winters, Robert K. The Forest and Man. 1974. Vantage Press; 516 West 34th Street; New York, New York 10001 ($12.50).

This is an excellent classroom reference or library reference. It is one of the few texts which explores the role of forestry throughout man's history, including an international perspective.

Wood Preservation in Alaska. Division of State and Private Forestry, U.S. Forest Service, Alaska Region. 1975.

This 65 page publication includes discussions concerning all facets of preserving wood, with particular attention to Alaskan situations. Parts of the text are rather technical; however, several sections can be readily adapted by the teacher for use in the classroom. One section of particular interest may be "Preserving Wood for Alaska's Farms and Homes."

FORESTRY TEXTS

FORESTRY TEXTS FOR USE AS TEACHER REFERENCES

Brown, Arthur A. and Kenneth P. Davis. Forest Fire Control and Use. New York: McGraw-Hill, 1973.

Conway, Steve. Logging Practices: Principles of Timber Harvesting Systems. San Francisco: Miller Freeman, 1976.

_____. Timber Cutting Practices. San Francisco: Miller Freeman, 1978.

Daniel, Theodore W., John A. Helms, and Frederick S. Baker. Principles of Silviculture. New York: McGraw-Hill, 1979.

Davis, Kenneth P. Forest Management: Regulation and Valuation. New York: McGraw-Hill, 1966.

Husch, Bertram, Charles I. Miller, and Thomas W. Beers. Forest Mensuration. New York; John Wiley & Sons, 1972.

Panshin, A. J., E. S. Harrar, J. S. Bethel, and W. J. Baker. Forest Products. New York: McGraw-Hill, 1962.

Pearce, J. Kenneth and George Stenzel. Logging and Pulpwood Production. New York: Ronald Press, 1972.

Satterlund, Donald R. Wildland Watershed Management. New York: Ronald Press, 1972

Sharpe, Grant W., Clare W. Hendee, and Shirley W. Allen. Introduction to Forestry. New York: McGraw-Hill, 1976.

Smith, David Martyn. The Practice of Silviculture. New York: John Wiley & Sons, 1962.

Spurr, Stephen H. American Forest Policy in Development. University of Washington Press 1976.

_____ and Burton V. Barnes. Forest Ecology. New York: Ronald Press, 1980.

Stoddard, Charles H. Essentials of Forestry Practice. New York: Ronald Press, 1978.

Walker, Laurence C. Ecology of Our Forests. A. S. Barnes and Company, 1972.

Wiant, Harry V. Jr. Elementary Timber Measurements. West Virginia University, 1979.

Young, R. A. Introduction to Forest Science. New York: John Wiley & Sons, 1982.

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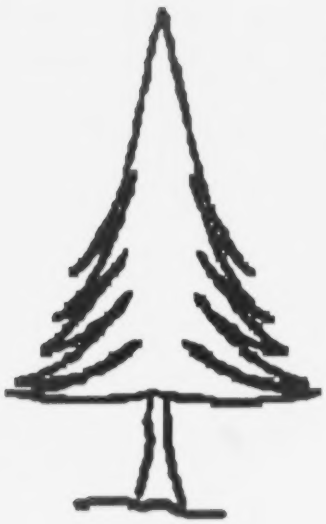

MAGAZINES

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Greenamerica (quarterly) $1/year (often in the form of a colorful poster)
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Washington, D.C. 20036

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Hatton, Brown and Co., Inc.
Box 2286
458 South Lawrence Street
Montgomery, Alabama 36103

National Woodlands Magazine (bi-monthly) $8/year
National Woodlands Magazine
P.O. Box 584
Traverse City, Michigan 49684

The Northern Logger and Timber Processor (monthly) $6/year
Northern Logger and Timber Processor
P.O. Box 69
Old Forge, New York 13420

Pulpwood Production and Timber Harvesting (monthly) $8/year
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Montgomery, Alabama 36103

Wood and Wood Products (monthly) $18/year
Vance Publishing Corporation
300 W. Adams
Chicago, Illinois 60606
(For vo-ag and other "shop" teachers - this is an excellent source of reviews and advertisements on woodworking machinery.)

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Texas A & M
College Station, Texas 77843

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New York, New York 10016

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Canadian Wood Council
701-170 Laurier Avenue West
Ottawa, Ontario KIP 5V5
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National Particleboard Association
2306 Perkins Place
Silver Spring, Maryland 20910

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Seattle, Washington 98101

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Portland, Oregon 97204

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Washington, D.C. 20036

COLLEGES AND UNIVERSITIES OFFERING ACCREDITED INSTRUCTION IN FORESTRY

NOTE: The Society of American Foresters (SAF) is responsible for accreditation of these forestry programs. There are many other institutions which offer forestry and forestry related degrees, but those accredited by SAF are considered most esteemed by the profession. For a more current listing, refer to the list provided by SAF annually in their Journal of Forestry.

ALABAMA

Auburn University, Department of Forestry, Auburn 36830. B,M,D.*

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Northern Arizona University, School of Forestry, Flagstaff 86001. B,M.

University of Arizona, School of Renewable Natural Resources, Tucson 85721. B,M,D.

CALIFORNIA

Humbolt State University, School of Natural Resources, Arcata 95521. B,M.

University of California, Department of Forestry & Resource Management, Berkeley 94720. B,M,D.

COLORADO

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CONNECTICUT

Yale University, School of Forestry and Environmental Studies, New Haven 06511. M,D.

FLORIDA

University of Florida, School of Forest Resources and Conservation, Gainesville 32611. B,M.

GEORGIA

University of Georgia, School of Forest Resources, Athens 30601. B,M,D.

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University of Idaho, College of Forestry, Wildlife and Range Sciences, Moscow 83843. B,M,D.

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University of Illinois, Department of Forestry, Urbana 61801. B,M.

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Michigan Technological University, School of Forestry and Wood Products, Houghton 49931. B,M.

University of Michigan, School of Natural Resources, Ann Arbor 48104. B,M,D.

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University of Minnesota, College of Forestry, St. Paul 55101. B,M,D.

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MISSOURI

University of Missouri, School of Forestry, Fisheries and Wildlife, Columbia 65201. B,M,D.

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University of Montana, School of Forestry, Missoula 59801. B,M,D.

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University of New Hampshire, Institute of Natural and Environmental Resources, Durham 03824. B,M.

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North Carolina State University, School of Forest Resources, Raleigh 27607. B,M,D.

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Oklahoma State University, Department of Forestry, Stillwater 74074. B,M.

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Pennsylvania State University, School of Forest Resouces, University Park 16801. B,M,D.

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University of Tennessee, Department of Forestry, Knoxville 37916. B,M.

TEXAS

Stephen F. Austin State University, School of Forestry, Nacogdoches 75961. B,M,D.

Texas A & M University, Department of Forest Science, College Station 77843. B,M,D.

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VERMONT

University of Vermont, Department of Forestry, Burlington 05401. B,M.

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University of Washington, College of Forest Resources, Seattle 98195. B,M,D.

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West Virginia University, Division of Forestry, Morgantown 26506. B,M.

WISCONSIN

University of Wisconsin-Madison, Department of Forestry, Madison 53706. B,M,D.

University of Wisconsin-Stevens Point, College of Natural Resources, Stevens Point 54481. B.

* The forestry degree(s) offered at each institution is shown by code: B (bachelors), M (masters), and D (doctoral).

PRINCIPAL HEADQUARTERS OF THE
U.S. FOREST SERVICE

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Headquarters, U.S. Forest Service	South Building 12th & Independence Avenue, S.W. P.O. Box 2417 Washington, D.C. 20013
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Rocky Mountain Region	11177 West 8th Avenue P.O. Box 25127 Lakewood, Colorado 80225
Southwestern Region	517 Gold Avenue, S.W. Albuquerque, New Mexico 87102
Intermountain Region	324 25th Street Ogden, Utah 84401
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Pacific Northwest Region	319 S.W. Pine Street P.O. Box 3623 Portland, Oregon 97208
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Eastern Region	633 West Wisconsin Avenue Milwaukee, Wisconsin 53203
Alaska Region	Federal Office Building P.O. Box 1628 Juneau, Alaska 99802
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Norht Central Forest Experiment Station	1992 Folwell Avenue St. Paul, Minnesota 55108
Northeastern Forest Experiment Station	370 Reed Road Broomall, Pennsylvania 19008
Pacific Northwest Forest & Range Experiment Station	809 N.E. Sixth Avenue P.O. Box 3141 Portland, Oregon 97208
Pacific Southwest Forest & Range Experiment Station	1960 Addison Street P.O. Box 245 Berkeley, California 94701

Rocky Mountain Forest & Range Experiment Station	240 West Prospect Street Fort Collins, Colorado 80526
Southeastern Forest Experiment Station	Post Office Building P.O. Box 2570 Asheville, North Carolina 28802
Southern Forest Experiment Station	Federal Building 701 Loyola Avenue New Orleans, Louisiana 70113
Forest Products Laboratory	P.O. Box 5130 North Walnut Street Madison, Wisconsin 53705
Northeastern Area State & Private Forestry	370 Reed Road Broomall, Pennsylvania 19008
Southeastern Area State & Private Forestry	1720 Peachtree Road, N.W. Atlanta, Georgia 30309

STATE FORESTRY AGENCIES IN THE UNITED STATES

ALABAMA
State Forestry Commission, 513 Madison Avenue, Montgomery 36104.

ALASKA
Division of Forestry, P.O. Box 7005, Anchorage 99510.

ARIZONA
State Land Department, Forestry Division, 1624 West Adams, Phoenix 85007.

ARKANSAS
Forestry Commission, P.O. Box 4523, Asher Station, Little Rock 72204.

CALIFORNIA
Department of Forestry, 1416 Ninth Street, Sacramento 95814.

COLORADO
State Forest Service, Colorado State University, Fort Collins 80521.

CONNECTICUT
Department of Environmental Protection, 165 Capitol Avenue, Hartford 06115.

DELAWARE
Department of Agriculture, P.O. Drawer D, Dover 19901

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Division of Forestry, Florida Department of Agriculture and Consumer Services, State Capitol, Tallahassee 32304.

GEORGIA
Georgia Forestry Commission, P.O. Box 819, Macon 31202.

HAWAII
Department of Land and Natural Resources, Division of Forestry, 1179 Punchbowl Street, Honolulu 96813.

IDAHO
Forestry and Fire, Idaho Department of Public Lands, State Capitol Building, Boise 83707.

ILLINOIS
Department of Conservation, Division of Forest Resources, 605 Stratton Office Building, Springfield 62706.

INDIANA
Department of Natural Resources, Division of Forestry, 608 State Office Building, Indianapolis 46204.

IOWA
State Conservation Commission, Wallace State Office Building, 300 Fourth Street, Des Moines 50319.

KANSAS
State University, State and Extension Forestry, 2610 Claflin Road, Manhattan 66502.

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Division of Forestry, Department of Natural Resources and Environmental Protection, 5th Floor Capitol Plaza Tower, Frankfort 40601.

LOUISIANA
Office of Forestry, P.O. Box 1628, Baton Rouge 70821.

MAINE
Forestry Department, Room 614, State Office Building, Augusta 04333.

MARYLAND
Forest and Park Service, Tawes State Office Building, 580 Taylor Avenue, Annapolis 21401.

MASSACHUSETTS
Division of Forests and Parks, Department of Environmental Management, 100 Cambridge Street, Boston 02202.

MICHIGAN
Department of Natural Resources, Forest Management Division, P.O. box 30028j, Lansing 48909.

MINNESOTA
Division of Forestry, 300 Centennial Ofice Building, 658 Cedar Street, St. Paul 55155.

MISSISSIPPI
Forestry Commission, 908 Robert E. Lee Building, Jackson 39201.

MISSOURI
Department of Conservation, Forestry Division, P.O. Box 180, Jefferson City 65101.

MONTANA
Department of Natural Resources and Conservation, Divsion of Forestry, 2750 Sprugin Road, Missoula 59801.

NEBRASKA
College of Agriculture, East Campus, University of Nebraska, Lincoln 68503.

NEVADA
Division of Forestry, Department of Conservation and Natural Resources, 201 South Fall, Carson City 89701.

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Division of Forests and Lands, P.O. Box 856, 856 Christian Mutual Building, Concord 03301.

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Division of Parks and Forestry, P.O. Box 1420, Trenton 08625.

NEW MEXICO
Forestry Division, P.O. Box 2167, Santa Fe 87503.

NEW YORK
Division of Lands and Forests, Department of Environmental Conservation, 59 Wolf Road, Albany 12233.

NORTH CAROLINA
Office of Forest Resouces, Department of Natural and Economic Resources, P.O. Box 17687, Raleigh 27611.

NORTH DAKOTA
State University, State Forest Service, First and Simrall Avenue, Bottineau 58318.

OHIO
Department of Natural Resources, Division of Forestry, Fountain Square, Columbus 43224.

OKLAHOMA
Forestry Division, State Board of Agriculture, 122 Capitol Building, Oklahoma City 73105.

OREGON
Department of Forestry, 2600 State Street, Salem 97310.

PENNSYLVANIA
Bureau of Forestry, Department of Environmental Resources, Fulton Building, Harrisburg 17120.

RHODE ISLAND
Division of Forest Environment, Department of Environmental Management, 83 Park Street, Providence 02903.

SOUTH CAROLINA
State Commission of Forestry, P.O. Box 21707, Columbia 29221.

SOUTH DAKOTA
Department of Game, Fish and Parks; State Office Building; Pierre 57501.

TENNESSEE
Department of Conservation, Division of Forestry, 2611 West End Avenue, Nashville 37203.

TEXAS
Forest Service, Texas A & M University System, College Station 77843.

UTAH
Division of Lands, Forestry and Fire Control; 411 Empire Building; 231 East 4th South; Salt Lake City 84111.

VERMONT
Department of Forests and Parks, State Office Building, Montpelier 05602.

VIRGINIA
Division of Forestry, Department of Conservation and Economic Development, P.O. Box 3758, Charlottesville 22903.

WASHINGTON
Department of Natural Resources, Public Lands Building, Olympia 98504.

WEST VIRGINIA
Department of Natural Resources, 1800 Washington Street, East Charleston 25305.

WISCONSIN
Department of Natural Resources, Bureau of Forestry, P.O. Box 7921, Madison 53707.

WYOMING
Forestry Division, 1100 West 22nd Street, Cheyenne 82002.

COOPERATIVE EXTENSION FOREST
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Head, Natural Resources Unit, Auburn University, Auburn 36830.

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Extension Forestry Specialist, Cooperative Extension Service, 209 Eielson Building, University of Alaska, Fairbanks 99775-5200.

ARIZONA
Range Management Specialist, University of Arizona, Tuscon 85721.

ARKANSAS
Extension Forester, P.O. Box 391, Little Rock 72203.

CALIFORNIA
Extension Forester, 163 Mulford Hall, University of California, Berkeley 94720.

COLORADO
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